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CLINICS.

CLINICAL LECTURES.

Clinical Lecture on Scarlatina and its Sequelæ.—By T. HILLIER, M. D., Physician to the Hospital for sick children. (Continued from p. 162.)

LECTURE II.—GENTLEMEN: In my last lecture I called your attention to the ordinary symptoms of scarlatina, and gave you examples to illustrate different types of the disease; I also referred to the very high mortality attendant upon it, showing that it was now in this country the most fatal of the acute specific diseases, that about 90 per cent. of the deaths occurred under the age of ten years, and nearly 70 per cent. under the age of five years; I also referred to the circumstance that it occurred epidemically, and that its severity and general characters varied much in different epidemics.

I concluded my lecture by reading you the notes of a case of *scarlatina without eruption*, and was alluding to the great differences which occur as to the amount of eruption in different cases.

To-day, after making a few more remarks on cases of irregular scarlatina, I shall allude to the diagnosis, the pathology, sequelæ, complications, and treatment of the disease.

There is no necessary relation between the severity of the fever and the amount of eruption; some of the most malignant cases have the rash but imperfectly developed; in these cases it often assumes a livid hue, and occurs in broad isolated patches with some points of ecchymosis. In other very se-

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vere cases the eruption may be most characteristically seen. In mild cases, on the other hand, the eruption may be almost absent, or it may be very well defined (Eliza R.) The following case of *anomalous scarlatina* is interesting, in which, after exposure to scarlatina infection, a child has slight feverish symptoms with coryza and headache, and a vesicular rash like varicella. Five days later she has anasarca, albuminuria, and dies in thirteen days of renal disease and meningitis. Graves relates a more striking case of this kind: "Some years ago scarlatina broke out in a medical gentleman's family and attacked all his children, with the exception of one young lady who, although in constant attendance on her sisters during their illness, did not exhibit any symptoms whatever of the disease. When all the children had become convalescent they were removed to the country, whither she also accompanied them. Here she was attacked with the peculiar anasarca observed in persons who have recently laboured under scarlatina." Graves adds: "This case, connected with those already detailed, appears to prove the fact that in some instances diseases produced by contagion do not give rise to the whole train of phenomena by which they are ordinarily characterized."

The diagnosis of scarlatina is not commonly difficult.[1] When the eruption is well-marked it cannot be mistaken for any other disease. The punctiform character running into a diffused general blush, its bright scarlet colour and appearance on the second day, distinguish it from the elevated papules of measles, which are arranged usually in a crescentic manner, of a duller red or purple colour, and appear on the fourth day. The coryza and cough of measles differ from the sore throat of scarlatina. Still there may be cases of scarlatina with coryza, or cases of measles with sore throat, and the eruption in either one of the diseases may be ill-defined, and in scarlatina may be delayed till the third or fourth day. The *tongue* in scarlatina is often characteristic, but sometimes it is as foul as in cases of measles, and the papillæ are not more prominent. An important point in the diagnosis is the greater frequency of the pulse in scarlatina, and the higher temperature; except in very mild cases in children the pulse is commonly above 120 in the minute, and the temperature over 101° for the first four days at any rate. These two points will also be of service in discriminating between cases of mild scarlatina and some forms of roseola. Now and then cases of this last disease are met with in which the rash has all the characters of scarlatina, and there may be slight febrile disturbance, and some redness and soreness of the fauces. If they occurred when scarlatina was prevalent we might be tempted to regard them as mild cases of scarlatina; but occurring isolated, not followed by any of the ordinary sequelæ of scarlatina, nor giving rise in others to any disease of the same kind, they are probably not to be thus regarded.

Bouchut stated that the following might be taken as a diagnostic mark of the eruption of scarlatina; that if the finger-nail be drawn over the reddened skin a white line will appear at the end of nearly a minute where the nail has passed, and remain for some time; so that we may in this way write a word on the patient's body, which will be legible for two or three minutes. This phenomenon, due to the contraction of the capillaries, may commonly be observed in the rash of scarlatina; but it is certainly not confined to redness from this disease, as it may be seen in other affections, such as common erythema, and the redness produced by a mustard poultice.

The *pathology* of this disease requires yet to be discovered. Whether it belongs to the hypinotic diseases with a deficiency of fibrin, or the hyperinotic with an excess of that ingredient, the four analyses made by MM. Andral and Gavarret, do not seem sufficient to prove. The blood-changes induced by the scarlatina poison are of a more recondite nature than a mere change in the amount of fibrin would represent. The great elevation of temperature noted in this disease may be taken as evidence that there is probably a powerful influence exerted on the sympathetic nervous system as well as

[1] When there is no eruption the diagnosis may be difficult, especially if scarlatina be not prevalent at the time. Occasionally cases of malignant sore throat occur, which it is very difficult, if not impossible, to distinguish from scarlatina anginosa without eruption. The frequency of pulse, heat of skin, and nervous symptoms, together with the history of surrounding cases of disease, would generally distinguish the scarlatinal cases from those of malignant angina. Diphtheria has many points of analogy to scarlatina, and not uncommonly prevails at the same time; but the diagnosis is usually very readily made by the presence of false membrane at a very early period, and the comparatively slight degree of fever.

a great activity of tissue change, because we have good proof that animal heat, whether normal or in excess, is dependent on chemical changes; we should expect, then, a large production of urea from the nitrogenized tissues. What is met with in reality? The observations on this point have been but scanty until recently. You will find it stated in Dr. Parkes' book on the Urine that two German observers, Uhle and Brattler, found each in one case of the disease an increase in that ingredient. On referring to the details of their experiments, it will be found that they did not carry them on long enough to show whether the amount of urea secreted during the height of the fever exceeded what was normal to the patient in a state of health, but only that it exceeded what was secreted during convalescence. They did not carry their experiments on until desquamation was complete and health fully re-established. In Uhle's case of a child, aged 13, each kilogramme of weight excreted 0.677 gramme—*i. e.* each pound weight of the child excreted about 4.74 grains in twenty-four hours during the fever; and during convalescence each kilogramme only 0.486 gramme, or each pound weight 3.4 grains. Now, this is very much below what is normal in children of that age. In Brattler's case the weight of the man is not given, but the quantity of urea passed during the fever was 41 grammes, or 632.7 grains; and during convalescence was only 23 grammes, or 355 grains; now, this is very much below the average amount of urea secreted by men, and the result was obtained at a time when health was not fully restored.

Mr. Ringer has investigated this subject more fully, and in the paper mentioned in my last lecture has shown, from the analysis of a number of cases, that even during the height of the fever there is not, as would be expected from the elevation of temperature, any increase in the quantity of urea secreted—that there is sometimes a decided decrease; that there is always a very decided decrease in the second and third weeks of the disease, and that the urinary organs only recover themselves so as to secrete a normal amount of urea at the end of the third or fourth week.

The average amount of urea secreted by five patients during the days on which there was decided elevation of temperature, was about .540 grammes to each kilogramme of the patient's weight, or 3.78 grains to each avoirdupois pound; whereas the normal amount determined by estimating the urea during the last ten or fifteen days of the patient's stay in the hospital, especially when they remained forty or fifty days, was about .700 grammes to each kilogramme, or 4.9 grains to each pound. The average amount of urea secreted for a week or ten days after the first five or six days was not more than .425 grammes to each kilogramme of the patient's weight, or 2.98 grains to each pound.[1]

Now, as there is no increase in the amount of urea secreted during the elevation of temperature, but usually a decrease, and a decided decrease just as the fever is subsiding, we must suppose that there is a retention in the system either of urea or of some products capable of being converted into urea. It would thus appear probable that the function of the kidneys is impaired very early in this disease, if not from the very first, and that it is not restored until several weeks from the commencement. We must suppose that the specific poison of the disease, when introduced into the blood, acts in some manner, perhaps on the sympathetic nerves, so as to cause extensive destruction of tissue with elevation of temperature, and whilst thus producing extra material to be eliminated, and in this way throwing increased work upon the kidneys, at the same time by a special action on them impairs their excreting power, either by direct chemical action or through the nervous system. We know that the kidneys and the skin enjoy functions which are to some extent supplementary the one to the other, so that if the skin does not act well, increased work is thrown on the kidneys, and *vice versâ*, if the kidneys do not act well the skin has more to do. The poison of scarlatina, whilst causing impaired action of the kidneys, excites active determination of blood to the skin, and usually the skin is dry. This is owing mainly to suppressed excretion, but partly to rapid evaporation from the high temperature. (Dr. Snow, *Medical Gazette*, 1842-3, vol. i. pp. 810-16.) Evaporation, of course, reduces temperature in proportion to its activity.

The observations of Mr. Sydney Ringer,

[1] In considering these quantities of urea allowances must be made for the low diet of the patients and the complete inactivity of their life during the fever.

if they be confirmed by further investigation, would throw light on many known facts in reference to scarlatina, and afford a guide to treatment. We could then understand more readily why exposure to cold is so injurious by arresting the action of the skin, and why keeping the patient in bed is so important in this disease; we should also argue from it that one very important indication for treatment is to use diaphoretics and promote free excretion from the skin. This indication has been arrived at on other grounds, and, confirmed by experience, has been extensively attended to; but these observations on the urine point more clearly than ever in this direction. A theory has been lately propounded by Dr. Fenwick, that the scarlatina poison acts in an especial manner not only on the skin, the pharyngeal mucous membrane and kidneys, but on the mucous membrane of the stomach, and to a less degree of the intestines, causing a *desquamative gastritis*. His conclusions are drawn from very scanty data, and have not been confirmed by others. He attaches considerable importance to the frequency of vomiting as an accompaniment of this disease; this may, however, arise either from an action on the nervous system or on the kidneys, and does not by any means necessarily imply anything approaching inflammation of the stomach. He states that in a case that died at an early period of scarlatina, after vomiting, diarrhœa, and convulsions, he found in the stomach a few ounces of brown acid fluid; its mucous membrane was in one part much congested. The fluid was *alkaline;* on filtration the clear portions gave a precipitate on boiling which was not dissolved by nitric acid. The thicker part of the contents consisted of pieces of fine membrane, cells, fine granules and shreds of membranes; the pieces of fine membrane showed no appearance of fibres, but were dotted over with granules, some of which were of fat. The cells of which the deposit chiefly consisted resembled those to be found in a healthy stomach; they varied in diameter from $\frac{1}{1100}$th to $\frac{1}{1000}$th of an inch. The tubes of the mucous membrane could be traced out more easily than usual. They were large and much distended at the closed ends; only a few scattered cells were visible in them, and their basement membrane seemed lined by a membrane dotted over with granules. The villi of the duodenum were stripped of epithelium, and contained numerous fatty granules.

In another case which died in the second week of the disease, the mucous membrane of the stomach was pale and seemed wasted. The general microscopical characters of the fluid were much the same as in the other case; but the cells were sometimes arranged in masses as if they had been stripped from the tubes. The tubes of the stomach were not distended, but seemed smaller than natural.

Dr. Fenwick considers that the functions of the stomach were quite paralyzed, in proof of which he adduces the retention of the casts in the stomach in an undissolved state.

In an extensive examination of the vomited matters during convalescence from scarlet fever, he has almost always found torulæ, which cannot, he says, exist when the stomach is actively secreting gastric juice.

This apparent desquamation of the gastric tubes is not an uncommon thing after death. I am not inclined to attach much importance to these observations, but it may be well that they should be borne in mind in making future post-mortem examinations in scarlatina cases as well as in deaths from other causes to compare with them. In the notes which I have of such cases I have no account of the microscopic appearances of the stomach. The conditions which I have met with in the alimentary canal after death have been—(1.) Injection of the duodenal mucous membrane, enlargement of Brunner's glands, of solitary glands, of small intestines, and of Peyer's glands in a case that died on the fourth day. (2.) In a case that died on the sixth day, the solitary glands in the large and small intestines swollen and hard, but not red. Peyer's patches very distinct. (3.) In a death five weeks from commencement of disease with pleurisy, pericarditis, and renal disease, the stomach and intestines were healthy. (4.) In one that died on the seventeenth day, being tuberculous, there were tubercle of small intestines and ulcers of the large intestines. (5.) In another tuberculous subject that died of pleuro-pneumonia on the seventeenth day, the intestines were, to the naked eye, healthy. (6.) Another case, which died of empyema in the sixth week, presented healthy small intestines, congested cæcum, ulcerations in the large intestines, and aphthous ulcers of the rectum. (7.) In

another child, who died of nephritis and pleuro-pneumonia on the thirty-ninth day, the duodenum and upper four inches of jejunum were brightly injected. Brunner's glands were considerably congested and elevated. The jejunum was generally congested. Peyer's patches of a dark colour, as if from pigment; in some cases there were superficial ecchymoses. Feces were adherent to the more prominent folds of mucous membrane of upper two-thirds of large intestines; on removing this, the mucous membrane is roughened, and the seat of minute ulcers the size of pins' heads; around these roughened folds there was some congestion.

In another case, a boy, aged 18 months, who died on the sixth day, the mucous membrane of the stomach was of a bright rose-red colour; otherwise natural. The intestines were healthy, except that all Peyer's and all the solitary glands were greatly enlarged, though not ulcerated.

Thus, out of nine cases where the intestines were examined, in six there was some abnormal appearance. The solitary glands seem to be frequently enlarged, and sometimes congested; Peyer's patches, too, and Brunner's glands are occasionally affected in the same way.

The part which the gastro-enteritic mucous membrane plays in the pathology of this disease is a question deserving of careful investigation.

In two cases fatal, one on the fourth and one on the eighth day, there was vomiting of dark green fluid for a day or two before death; and in one of these, as well as three other cases that died on the sixth day, there was tendency to looseness of the bowels.

Diarrhœa is not uncommonly a symptom in severe cases, and is one which it is often difficult to arrest.—*Med. Times and Gazette*, June 14th, 1862. (To be continued.)

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Clinical Remarks on Sympathetic Inflammation of the Eyeball, its Danger, and the Means of arresting it, made at the Central London Ophthalmic Hospital.—By HAYNES WALTON, Surgeon to the Hospital. The subject is among those in this department of medicine that modern observation has thoroughly recognized, and investigation and rational experiment have found a remedy for. Sympathetic inflammation, or sympathetic ophthalmitis, may arise out of any circumstances that produce disorganization of the eyeball. It is most commonly, however, seen when an eye has been spoiled by wounds. This is the usual course of things. An eye is wounded, perhaps severely, and the lens has escaped, or a portion of the vitreous humour; or, perhaps, the cornea only has been penetrated, and the iris, or the lens wounded. The acute and primary inflammatory attack is subdued, and chronic disease supervenes. The heretofore sound eye gets intolerant to light, the first common result; impaired vision in some form is the next bad omen. Loss of focal adjustment, incapability of sustaining vision on minute objects, loss of definition (generally called feeble sight), muscæ, spectra, flashes, stars, inflammatory action, loss of pupillary movements, change of iris colour, softening of the eyeball, and shrinking, are the later manifestations. Thus it would seem that the morbid action travels from the retina forwards. Ultimately, all the ocular tissues are involved, and atrophy ensues. There may be varieties in the subjective and objective symptoms; and there may be no pain, or it may exist with great severity.

The sympathetic action is imminent, so long as any irritation produced by the traumatic disease lingers, so that it may be developed in a few weeks, or not for years. It cannot be said that any peculiar form of wound, or the injury of any particular tissue, excites that kind of action which develops the sympathy; as blows without breach of surface, or chemical injuries, may cause it.

Inflammatory affections producing disorganization of the eye may induce sympathetic disease. I have seen the greater number of cases arising from staphyloma of the cornea and the sclerotica—that is, general enlargement of the eyeball—the result of purulent ophthalmia in infancy, than any other cause.

The diagnosis is by no means obscure, and in traumatic cases it is most easy. The eye primarily injured or diseased, always manifests symptoms of irritation or disturbance; and there is evidence of acute or chronic inflammation. These may be slight; but they are to be discerned with care. There is always soreness under touch. So far as I know, vision is invariably extinct. If, then, a patient who had lost an eye from accident or disease, were to apply to me on account of the eye heretofore well, but now attacked with any of the symptoms that I have pointed out of sympathetic derangement, I

should examine the eye primarily injured; and if I discovered any morbid action in progress, any of those states which are connected with, or arise out of, what is called inflammation, I should say that I had before me a case of sympathetic ophthalmitis.

There are two errors into which you may fall, but they are easily avoided when you are on your guard. Do not, then, mistake for sympathy what is merely the same disease that has appeared in the one eye, and is secondary only in the order of time. Remember that the destruction of one eye, from any cause, may be followed, although the occurrence is not common, by the loss of the power of the retina in the other, and this without the least trace of any active symptom in that which was hurt. Precisely the same thing may occur after the one eyeball has collapsed, or has even been extirpated, so that sympathetic inflammation can have nothing to do with it.

The treatment is definite and sure; but is not to be found in general remedies, local applications, nor any dietary system. Nothing of the kind can be depended on; the affection can be stopped, or subdued, only by surgical treatment. A portion of the originally diseased eyeball must be removed, whereby the products that have set up the irritation, or the cretaceous, or ossified tissue, which has acted as a foreign body, may be got rid of; or extirpation resorted to. The practice works wonders when done early. If adopted before the sympathetic action has induced palpable structural changes, it will be all effectual. At later stages it may arrest progress, and stay the destruction. Even when the pupil has become adherent to the capsule of the lens, and the iris dull, I have known a check.

As a rule, the removal of a portion of the eyeball, "abscission," is adapted to those cases in which the eye has been wounded in the front part, and the abnormal changes limited to that portion of the organ. When the whole eyeball evidently is diseased, and especially when there is distension of the sclerotic coat, or general enlargement, "extirpation" is the more adapted.

I perform abscission in this manner. The eyelids having been retracted, I transfix the cornea, or whatever remains of it, or the staphyloma, if there be one, with an ordinary tenaculum, and cut it off with a long and narrow scalpel, gently and quickly. It may be necessary to make the amputation a little behind the cornea, and then the iris, or whatever remains of it, is taken away. When the lens is present, whether opaque or not, it ought to be removed. An attempt should be made by gently manipulating and rapid closing of the eyelids, to save as much as possible of the vitreous humour. I now place a ball of cotton wool or a pledget of lint quickly over the eyelids, maintain it with a bandage, and keep the eye so bound for two or three days. Afterwards, I apply strips of plaster. There is no more important part in the proceeding than this, without which being properly done there may be troublesome bleeding and long convalescence. Healing is effected by the cicatrizing of the surface, and its rapidity depends on the healthiness of the vitreous humour. Among the advantages of "abscission," may be mentioned that it admits of the most perfect adaptation of an artificial eye. This is through the stump that is left.

"Extirpation" should be done within the "ocular sheath" of the eyeball. For much that is interesting with regard to this sheath or tissue, of which the existence was only made out a few years ago by Dr. O'Ferrall, of Dublin, I beg to refer you to my work on the *Surgical Diseases of the Eye*, second edition. This operation would be called a more brilliant one than "abscission;" and there can be no doubt that, although the proceeding, so far as the practical surgery is concerned, is more prolonged and severe, the recovery may be more rapid, and the general effect on the system perhaps less. Yet I am quite sure that if the patient's ultimate welfare be considered, its adoption should be the rare exception.

I consider this to be the best manner of doing the extirpation. The eyelids having been separated by the silver wire retractor, the conjunctiva is dissected off with forceps and scissors close to its ocular attachment; the recti and oblique muscles then taken up severally with the hook, as in the operation for strabismus, and divided at their insertions; the sheath detached by a probe or hook from the eyeball, which should now be drawn aside, and the optic nerve cut through. There is generally no bleeding; but should it occur, a compress and bandage must be employed.—*British Med. Journal.*

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Clinical Lecture on the Diagnosis of Deep-seated Tumours of the Thigh.—By Edward Cock, Surgeon and Lecturer on

Clinical Surgery, Guy's Hospital. The subject of the lecture was a case of tumour of the thigh, on which Mr. Cock had operated on the previous Thursday. On that occasion Mr. Cock gave the history of the case, and reviewed the various kinds of tumours which might occur in that position, and present more or less similar symptoms. The case was one of great interest and of much obscurity. He would, therefore, again give the history and remarks on the diagnosis, and further illustrate the various points of the case by the results obtained by the operation.

Before the operation the only thing certain was that there was a swelling of the upper part of the thigh, evidently deep under the muscles—perhaps only under the rectus and tensor vaginæ femoris, but possibly under the deepest layer, the vasti.

The patient was admitted on November 23. The history of the case was as follows: He had been employed as a groom, and had always had good health. He was, however, evidently of susceptible and irritable fibre, and of delicate appearance. Probably he would be subject to great change in the circulatory organs. In fact, although not really ill, he was a man of weak power. He said that nine months ago he received a blow, bruising the lower part of the thigh. This, however, did not appear at the time to be of much moment, and soon got well. Probably it had nothing to do with his subsequent illness. When Mr. Cock first saw him, there was a swelling occupying the outer and fore, and also extending rather towards the inner side of the thigh. As to its depth, it was doubtful whether it was under the superficial or the deeper layers of muscles. It was tense, did not fluctuate, but there was a general yielding from steady pressure. It extended quite up to Poupart's ligament, rendering it ill-defined. It was clear, however, that it had not passed beyond it. Below this point it extended so as to occupy the upper fourth of the thigh. The femoral artery was displaced forwards, and was traced curving over the upper part of the swollen thigh, and then dipping down again to its natural position. This showed that the tumour was, at least, below the artery. There was pain over the tumour, but this was in the course of fibres of the anterior crural nerve, which were stretched over it. When at rest he had little or no pain, especially when the limb was so placed that there was no tension over the swelling.

The history the patient gave of the origin of the tumour is extraordinary, and probably not correct. According to his account it came in a few hours, six months ago. He had had a long day in riding and walking, and his thigh, he said, was strained. He went to bed tired, and next day he noticed the tumour—then almost as large as now. In fact, Mr. Cock said, since the patient's admission, in November, there had been very little increase in size. It would sometimes be a little larger, and then subside again, but there was no real increase in bulk. The variations in size were due to manipulations in repeated examinations by himself and his colleagues.

There was no pulsation except at the inner side, where it was in contact with the femoral and profunda arteries. Probably one of these arteries was above and the other below. At the outer part there was not the least pulsation.

Mr. Cock did not believe that the man's statement as to the sudden origin of the tumour was correct, as it was not possible to conceive that a tumour so large could have formed so quickly.

Probably it had existed several months, bound down deeply by muscle and fascia, and thence there could be no great access of blood to it. The day when the patient thought the tumour began, was probably when, after violent exercise, the structures which had previously bound it down relaxed or gave way, and the tumour found room to expand itself, so that in a few hours it attained considerable size. No doubt it had been before dense, hard, and small, and when it became large enough to attract the patient's attention it was elastic and soft. Before the operation Mr. Cock expressed his belief that the tumour was behind all the muscles. It proved to be lying on the bone, the capsule of the hip-joint and insertions of the psoas and iliacus.

As to the diagnosis of this tumour before operation. Its supposed rapid appearance, if the man's own account had been relied on, would, so far as that alone was concerned, have led to the suspicion of the giving way of a bloodvessel, or the formation of an aneurismal sac. If blood had been forced quickly from an artery there might be a mass which would not pulsate, but if slowly, then the tissues round about

might condense into a sort of aneurismal pouch, and pulsation be produced; and thus an aneurism simulated. There would be, however, none of the regular symptoms of an aneurism. There would be no regular pulsation—not the expansive pulsations of an aneurism, but possibly a thrill. But, as he had just said, there might be effusion of blood and no pulsation. In this case the blood could come only from one of two arteries, the femoral or the profunda. It certainly did not come from the femoral, as this was to be easily traced over the tumour. It was equally certain that it did not come from the profunda, as it was not in the situation of this artery. Mr. Cock said that he had seen some cases in which the profunda artery had been injured or diseased, and blood had been gradually poured out; but, as he said, blood from such a source never could reach the position of this tumour. It passes along the course of the artery in the loose cellular tissue, and does not break down the fascia and pass to the outer side, but produces a tumour in the front and inner part of the thigh. An aneurism of the profunda was not, however, always to be diagnosed. A man, a few years ago, had a swelling in the thigh, evidently an aneurism, and apparently a femoral aneurism, as the artery could be traced to it and no further. Its pulsation was checked by pressure on the trunk of the femoral; and it was cured by ligature of the external iliac; but the pulsation in the upper part of the femoral artery was afterwards found to be continued down over the position where the aneurism had been. This patient had disease of the aortic valves. He kept well for some time, and then died suddenly. It was found after death that there had been aneurism of the profunda artery. Mr. Cock mentioned another case to illustrate the diagnosis of tumour of the thigh. He was sent for to examine and open what appeared to be a huge abscess in the upper part of the thigh. The thigh was immensely swollen down its inner and front part. The femoral artery was clearly to be traced down over the tumour. It was clear, therefore, that it was not an aneurism of the femoral. As, however, he had some doubt as to the contents of the swelling, which were evidently fluid, he passed in a grooved needle. Blood, but no pus, escaped. He then conceived that the profunda artery had given way, or that it might be a malignant tumour. An operation was out of the question, as the patient, a delicate emaciated lad, was much reduced in health. He died, and at the autopsy it was found that the profunda artery had been the source of the blood. There was a single round ulcerated opening. Mr. Cock alluded to another case exactly similar. To have tied the external iliac in such cases would have produced such a great impediment to the flow of blood as almost certainly to have caused gangrene. So far then aneurism or effusion of blood may simulate tumour of the thigh; it was clear, however, that in this case there was no such cause for the swelling.

It might be that the tumour was malignant. Not probably of the bone, as there was no history of the excessive gnawing pain which is always an early symptom in these cases. Hydatid tumour was another possibility. When hydatid tumours occurred in soft structures, they were always soft, elastic, and round, but when bound down by dense structures they may thus acquire a deceptive appearance of hardness. Hydatids in their surgical aspect, generally occurred in soft structures, but they might occur anywhere. Not long ago Mr. Cock removed a tumour from the back of the thigh which was deeply placed under all the muscles. As to fatty tumours, in ninety-nine cases out of a hundred they were seated in the subcutaneous tissues, but now and then they are found deeper and in contact with bone. In one case Mr. Cock removed a fatty tumour which was deeply placed amongst the muscles of the forearm. In the operation after separating the muscle and coming down to the deep fascia it appeared a hard dense tumour, but on dividing this fascia it turned out to be a fatty tumour, which had acquired the feeling of hardness from being bound down by the fascia over it. Mr. Cock alluded to another case in which a fatty tumour of many pounds' weight had been removed from the buttock. The man had had it ten or twelve years, and it had grown to an enormous size. The surgeon had made an incision with the intention of removing it, but finding at his first incision nothing but muscular fibre, he abandoned the operation. Afterwards the patient came under the care of Mr. Bransby Cooper, who cut through the gluteus maximus, and then exposed a large fatty tumour. It was found

to pass into the pelvis and down the thigh; but although it was very extensive, its connections were very loose. It was easily removed, almost tumbling out by itself. Another instance of fatty tumour deeply placed was in the case of a child. In this case the tumour was evidently deeply placed in the neck, and on cutting down to it, it was found to be a fatty tumour placed between the spinous and transverse processes of the cervical vertebræ. It was easily turned out with the fingers.

Then the tumour might be fibro-plastic, as after the operation it was proved to be. A fibro-plastic tumour, Mr. Cock said, was but one degree removed from cancer. Formerly it was called malignant, and hence the records of cure of cancer. Some years ago Mr. Cock removed a tumour of this kind from the side of the neck, which extended from the jaw to the clavicle. The patient still remains well. A year ago he removed a tumour deeply placed in a boy's neck. At the first attempt to remove it there was so much bleeding that he was obliged to desist. This made it more likely that it was malignant. It grew larger, but, as Mr. Cock had reason to alter his opinions as to its character, he again operated. It was removed, and the boy recovered. It turned out to be a fibro-plastic tumour. Tumours of this kind were very likely, he said, to return, but nearly always in the same place. In one case of fibro-plastic tumour in the thigh of a woman, he removed the growth many times, but at length it became so deeply seated, involving the artery, that removal, he considered, was unadvisable. The patient and her husband, however, were extremely anxious that the tumour should be removed, and the limb was amputated. Death followed forty-eight hours after the operation. Mr. Cock said that he believed that in removing such tumours the damage necessarily done to the surrounding tissues sowed fresh seed for the growth of future tumours.

In another case, in which he removed a similar tumour from the thigh, the disease returned, and in three or four years from the date of the first operation he amputated above the knee. The stump healed well, but the patient died of tumour in the chest and lungs.

In another case, a girl, he removed a fibro-plastic tumour from the thigh eleven times, but at last it involved the femoral artery, and he therefore declined to remove it. This decision did not satisfy the patient, and she therefore went to another hospital. An operation was performed. She died a week or two after.

In the case of the patient the subject of the lecture, Mr. Cock said, in reference to the operation, that he had been anxious that as little blood as possible should be lost, knowing that necessarily a good deal must be lost. He therefore cut (away from any known source of arterial hemorrhage) between the position of the tensor vaginæ femoris and rectus femoris. Having bared the fascia under these muscles, a solid rounded mass was seen, but the tumour itself was not yet exposed. On cutting through the fibres of the crureus and vastus externus, the tumour itself was fairly exposed, and was found to be lying on the bone. On the first incision, some of the tumour forced itself through the wound. The wound was enlarged, and the finger passed in, and by the finger, and not by the knife, the whole of the mass was turned out. It was not in one circumscribed form, but there were many off-shoots and spurs in pigeon-holes of fascia. The finger was evidently passed over the capsule of the hip-joint, the insertion of the psoas and iliacus muscles, and over the bone. Except a little on the inner side, the whole was removed. In this direction, the inner side, it was impossible to separate it, and it would have been unwise to have used force. What remained he tied.

The bleeding was restrained by stuffing the cavity with sponge and binding it firmly down. The patient suffered a good deal from chloroform, but he had rallied a good deal next day. The healing of such a wound must be long, and there was some fear that pyæmia might ensue.

Dr. Wilks examined the tumour. He said that it was fibro-plastic, containing long nucleated fibres, none of the cells of cancer. It was not simple fibre, but showed a growth of some activity.—*Med. Times and Gaz.*, March 8, 1862.

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Cases illustrative of the Action of the Tincture of Veratrum Viride, with Clinical Remarks. By Dr. Handfield Jones.

Case 1. A. R——, male, aged two years; seen May 1st, with Mr. Palmer. The child was attacked with symptoms of croup about four P.M. yesterday; was play-

ing about a little before. He has had since then ten grains of potassio-tartrate of antimony (*i. e.*, rather more than half a grain every hour), and two leeches to the upper part of the sternum. The breathing is now much relieved, less noisy, though still very perceptibly harsh; chest free; no râles in back; pulse 140; skin hottish; bowels relaxed; has vomited. Is usually a healthy, strong child. Colour of face is still good.

In Mr. Palmer's judgment, as well as in that of Dr. H. Jones, the child was in a most perilous condition. Although there was a lull in the symptoms, it appeared most probable that it was only temporary, and that as night came on the dyspnœa would increase, and death take place before long. They agreed to give two minims of tincture of veratrum viride every hour.

May 2. Is decidedly better; stridulous respiration nearly gone; no effort in breathing; cough loose; skin moist and cool; pulse 129 at three P. M., in the morning 118. Has had three two-minim doses at hour intervals; since then four-minim doses at two hour intervals. No vomiting, but considerable tenesmus, for which one minim of tincture of opium was added to each dose. Voice is still shrill and brassy, and pulse too full and firm. A calomel aperient and warm bath were ordered.

3*d*. Is convalescent; pulse 72; child is cheerful, plays with his toys, and calls out for bread and butter; all croupy symptoms disappeared; vomited much last night, and was half suffocated during the act; after the vomiting he was considerably better. Every dose of the medicine seems to do good.

He recovered well.

Case 2. J. M——, aged two years and a half, female, admitted March 17th. Ill two days. She has bad cough; breath short; is feverish; hands hot; much thirst; no appetite. Resonance impaired at both lower backs; breathing in both backs very harsh; hepatization no doubt is taking place. Ordered, tincture of veratrum viride, twenty-five minims; mixture of citrate of potass, three ounces: two teaspoonfuls to be taken every second hour.

March 20. Is reported better; much cooler; medicine made her very sick all the first night; it has been given every four hours since yesterday.

21*st*. Slept well all last night; skin natural; good resonance in both backs; tolerable breathing, with some bronchial râles. The sides of the chest do not seem to collapse in inspiration. To have a drachm of cod-liver oil thrice a day; and two drachms of a mixture of citrates of potass and iron, and chloric ether: thrice a day.

24*th*. Is much better; appetite improved. Repeat medicine. Ceased attendance.

Case 3. T. A——, aged three years, male, was admitted June 2d. Ill three days. He has bad cough; is sick and feverish; bowels confined; hands hottish. He is a robust-looking child, with a good colour. Ordered a citrate of potass and dilute hydrocyanic mixture, four times a day; and gray powder and jalap at bedtime.

June 5. Is not sick, but still feverish; bowels confined; does not whoop, but coughs severely; harsh breathing and râles all through both backs. To have two minims of tincture of veratrum viride, in two drachms of water, every second hour.

7*th*. Very great relief from the tincture of veratrum viride, which was taken only one day; it caused much sickness, and has been exchanged for citrate of potash saline, ipecacuanha wine, and tincture of camphor, every fourth hour. There is still much cough; but the child is cool, and looks well. There is good breathing in the left and a little râle in the right back. To continue the mixture, with a quarter of a grain of the extract of belladonna to each dose.

16*th*. Bad cough; is worse; hands hottish; does not clearly whoop. To have the tincture of veratrum viride, thirty-five minims: water two ounces: one drachm three times a day.

26*th*. Is a great deal better; just well; hands cool; has scarcely any cough—only when he cries about anything. Discharged.

Dr. Jones made the following clinical remarks: "The foregoing cases certainly corroborate the very favourable testimony of our American brethren as to the virtues of veratrum viride. I think it is well worthy of more extensive trial by the profession, and I am much inclined to hope that it will prove a substantial addition to our means of controlling inflammatory disease. As far as I can judge, it would have gone very hard with both cases (1 and 2), but for the veratrum viride. Case 1 would, I believe, have died; and Case 2 would at best have had a slow convalescence. This case was

the first one in which I tried the drug, and I was quite prepared to find at the next visit a considerable extent of both lungs hepatized, which with any other remedy I verily believe would have happened. Certainly veratrum viride is no placebo, and will only find favour with the partisans of active interference. Those who have witnessed its action will, I think, find it hard to believe that acute disease is never curable by depressing measures, or that expectant practice is always advisable. It is evidently a remedy very much of the same kind as digitalis, which has been employed on the continent lately in the same way, and apparently with very good results. (*Vide* Hirtz's paper in the *Bull. de Thérap.*, Feb. and March, 1862.) The *modus operandi* of both is clearly to depress the circulation, which digitalis at any rate seems to do by hyper-stimulation of the vaso-motor nerves. The cold face and hands and slow pulse of patients under its full action, are just such phenomena as result from stimulation of the vagi and sympathetic nerves."—*Lancet*, July 19, 1862.

HOSPITAL NOTES AND GLEANINGS.

Rupture of the Lung without External Injury, produced by a Fall.—H. M., a strong, healthy man, 25 years of age, while in the act of leaving an omnibus, on January 8, fell, striking the ribs, just below the angle of the left scapula, against the step. He felt a good deal of pain, and thinking he had broken a rib, went home in a cab. During the night pain and difficulty of breathing increased, and he came to St. Bartholomew's Hospital the next morning. When admitted he was in great pain, and breathed as if suffering from acute pleurisy. On examination, no signs of external injury could be detected, and no fractured rib was found; but there was dulness on percussion over the base of the left lung behind, and a friction-sound was heard about an inch below the angle of the left scapula, breathing elsewhere being natural. He had expectorated very little in the night, and there had been no hæmoptysis.

Mr. Skey, who saw him soon after his admission, ordered eight ounces of blood to be removed by cupping over the seat of pain, and a flannel bandage to be applied to the chest.

January 10. Has had a restless night, and is still in a good deal of pain; skin hot and dry; pulse 120; respirations 28 in a minute; scarcely any expectoration. The dulness at the base of the left lung has extended slightly, and crepitation is heard below the angle of the left scapula.

11*th*. Has had a bad night; pulse 130 per minute, and of small volume and feeble; respirations 30; cough troublesome; has expectorated some rust-coloured tenacious sputa during the night.

12*th*. Is getting gradually worse; pulse is feebler, and respiration more rapid than yesterday. There has been scarcely any expectoration since yesterday. No auscultation was made to-day, as moving distresses him a good deal.

14*th*. Is much weaker since the last note; pulse 135, very feeble; respirations 35; skin cold and clammy. The apex of the heart is found pulsating in the epigastrium. Percussion loud and boxy at the upper part of the left side of the chest; quite dull in the lower half. Amphoric breathing distinctly heard above the angle of the scapula; below that point nothing.

15*th*. He passed a very bad night, and was this morning evidently in a dying state. Although suffering considerable dyspnœa from the amount of fluid and air in the left side of the chest, Mr. Savory and Mr. Wood agreed that an operation for letting out the air would be useless, as he was in so exhausted a condition that it would be impossible to prolong life. He died this afternoon.

Post-mortem, Eight Hours after Death.—On opening the chest a large quantity of fetid gas escaped from the left pleural cavity. The apposed surfaces of the pleura were covered throughout the greater part of its extent by a thick layer of recent lymph. About a pint of fetid puriform fluid, containing apparently very little blood, was found at the lower part of the pleural cavity. The lung was emptied of air, and packed closely along the side of the spine. On removing it a circular opening, about an eighth of an inch across, was seen on its surface, at a spot corresponding with the sixth or seventh rib, about an inch in front of the angle. This opening led into a cavity immediately below the surface, large enough to contain about two drachms of fluid, with irregular walls, to which were attached shreds of broken-down lung tissue. The ribs were not injured, and there were no marks of

violence external to them. Water was forced down the trachea, and the lung expanded fully. With the exception of a little emphysema, the rest of the lung structure was healthy.—*Med. Times and Gaz.*, July 19, 1862.

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Paraplegia in an Acrobat, with Fracture and Displacement of the Spine, the result of a Fall; Recovery.—The nature of the injuries sustained, and that they should have ended in a recovery, render the following case a most remarkable one. Fractures of the vertebræ, with such an amount of compression of the spinal marrow as occurred in the present instance, are almost invariably fatal; for if a patient does not recover from the paralysis, even after union of the fracture, he is almost certain to die ultimately of disease of the cord. Fortunately, the paralysis had in great part disappeared, and the fracture had united when the patient left England for America. It would be interesting to know the ultimate result of this case:—

F. M——, whilst performing on the trapêze at the Alhambra on the night of the 28th of March, 1861, missed his hold, and fell a distance of above twenty feet on to the stage with so much violence that he rebounded some two or three feet from the latter. Upon endeavouring to rise he found that he had lost the use of the lower half of his body. He was, therefore, taken to the Charing-cross Hospital, where Mr. Hancock saw him about an hour after the accident. At this time there was considerable tumefaction about the lower dorsal vertebræ; and, after careful examination, it was found that there was fracture of the tenth dorsal vertebra, with more or less displacement. The parts below this point were completely paralyzed; deprived alike of motion and sensation; tickling of the soles of the feet did not produce the slightest reflex movement; the abdomen was tympanitic, and the lower portion—nates, scrotum, &c.—entirely void of sensation. There was no priapism. He was placed upon his back, with a pillow under the injured part, and warm anodyne fomentations were ordered to be applied over the abdomen; and as the bladder and rectum were entirely paralyzed, the house-surgeon was directed to draw off his urine four times in the twenty-four hours.

After remaining two days at the hospital, he was removed, at his own request, to an hotel in the neighbourhood of Leicester-square.

For the first month the treatment consisted in keeping his bladder empty, attention to his bowels, and rest, preserved strictly in the horizontal position, the greatest care being taken that in turning or shifting him his body was moved as a whole, without any strain upon the injured part. The urine, which at first was slightly acid, became decidedly alkaline in the course of a week; but there was no mucous deposit until three weeks after the injury, when, in spite of attention to catheterism, which was most skilfully performed by his wife (who tended him throughout with the greatest attention and talent), it formed in large quantity. This, however, was kept under by the infusion of buchu with dilute nitric acid, the good effects of which were undoubted, as the mucous deposit disappeared in a few days after taking it, whilst the urine at the same time gradually became acid, as shown by the litmus-paper, which was used daily throughout the treatment, and the dose of the above mixture regulated accordingly. Upon some two or three occasions, however, he got tired of the medicine, and left it off, and the mucus then reappeared in the urine. He therefore continued it regularly until about three weeks before he left England, when he gradually left it off, as the deposit ceased.

At the expiration of a month, as there still remained considerable tenderness in the neighbourhood of the injury, the part was painted over with Lugol's strong tincture of iodine, which was followed by good results, as he began to regain a little motion of the muscles about his hips, with slight return of sensation in the abdominal, pudic, and gluteal regions. He was also directed to take half a grain of sulphate of zinc, with one-thirtieth part of a grain of strychnia, thrice daily. This was followed by sharp, shooting pains in his legs down to the knees, with increased power of motion in the hips and thighs, especially in the left; there was also a gradual increase of sensation from the seat of injury downwards towards the knee, more on the right than left side, for whilst motion returned more quickly on the left side, it was the reverse as regards sensation.

At the end of two months, as the tenderness, swelling, and thickening had entirely subsided, a more minute investigation could

be made, and it appeared that the fascia and muscles had been torn across opposite the tenth dorsal vertebra, whilst the spinous process and arch of the tenth vertebra could be distinctly felt projecting backwards nearly a quarter of an inch beyond the adjacent bones, and twisted somewhat to the left side, so that in all probability there was transverse fracture of the bone, with partial displacement of the arch—a supposition supported by the patient's account of the accident.

He is a man of great courage and intelligence, and he said that he was perfectly aware of what took place at the time of the accident, which he described as follows. That in that particular performance he had to balance his body with the epigastric region upon the horizontal bar of the "trapéze," and to turn a somersault over to the horizontal bar of another trapéze; that in turning this somersault something on his belt caught the bar and prevented the somersault being of sufficient length, so that he missed the other bar and came to the ground with his head and knees closely approximated, experiencing all the violence of the fall directly upon the injured part of the spine, which latter was at the time bent forwards to its utmost.

He could now (two months after the accident), by holding on the top rail of the French bedstead, turn over in bed without assistance. There was considerable shooting pain and stinging down his legs, occasionally accompanied with profuse warm perspiration, during which he could move the legs with much greater power and facility; whilst about the same time was observed another point of some interest; although tickling the soles of his feet and his toes did not produce the slightest movement in either leg, when he rubbed himself by the side of the scrotum over the front of the descending ramus of the pubes the toes of the corresponding foot were thrown into spasmodic action.

At the end of three months he had no sensation below his knees, but a very fair amount from the hips to the knees. He could move his thighs and legs, but not his feet. Lying on his back, he could, by the muscles of his hip and thigh, raise one leg from the bed, and cross it over the other leg. He could also turn himself over in bed, raise himself upon his hands and knees, and move about in that posture up and down his bed.

During the preceding month there had been gradual improvement in the vitality of the lower bowels, at first manifested by being conscious when the feces passed, and subsequently by his gradually becoming aware when the bowels were about to act, until by degrees he acquired the power of controlling the action of the bowels so as to enable him to use the night chair. He now (three months) began to pass his urine without the aid of a catheter; the first time he did so was during the act of defecation. He then passed it at other times, and, as it was ascertained by the introduction of a catheter on various occasions immediately after micturition that he had completely emptied the bladder, the continuous use of the catheter was dispensed with, and it was subsequently employed as a matter of precaution only. His sexual powers also returned. He continued to improve until the 28th September, when he left London for America. He had now recovered a certain amount of sensation down to and in his feet, and he could move his toes, though but slightly. As he had for some weeks been able to move about upon his hands and knees, he was anxious to try whether he could manage to walk by the aid of instruments. A long splint was therefore applied at the back of each leg and thigh, to prevent the knee bending, and he was then able to stand upright, and to walk round the room, holding by his wife and a friend.

The dose of strychnia, which was continued to the time he left England, never exceeded one-thirtieth of a grain, taken thrice daily; but the sulphate of zinc, given in combination, was gradually increased from half a grain to two grains.—*Lancet*, March 22d, 1862.

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Disorganization of the Wrist in a woman aged seventy; Amputation.—The age of patients is a very material element in the question of mortality after operations. The danger is much augmented in patients exceeding sixty years of age, especially in cases where the lower extremity is affected. If one had to choose, Mr. Erichsen lately remarked, an operation in a part as the least dangerous, he would certainly take the forearm. In a woman of seventy, with a large ulcer over the back of the right forearm, amputation was the only resource, the limb was so painful, and the wrist so completely disorganized. She had had an attack

of diarrhœa, which was not wholly arrested; but as she was suffering so much pain, he thought it wiser to remove the forearm at once, which was done at its upper third, under chloroform, on the 10th June. As was anticipated, the carpal joint was generally destroyed, the cartilage being removed, the bones exposed, and pus present. These disorganized joints, Mr. Erichsen further observed, were not common in advanced life, and when they do occur in old people, are generally the result of long-continued rheumatic disease. In the present instance there was no rheumatism, but the mischief was the result of old standing disease. The progress of this patient subsequently was most satisfactory, the stump healing kindly. —*Lancet*, July 12, 1862.

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Staphyloraphy complicated with Enlarged Tonsils.—The operation of staphyloraphy is one so frequently practised by Mr. Fergusson at King's College Hospital, and we may say invariably with success, that we have not usually drawn attention to it unless there was something special or unusual to notice in the individual cases. On the 16th of June, a girl was submitted to the operation, with fissure through the soft palate, and a partial one through the hard. The parts were not abundant, but yet sufficiently fleshy to be favourable for the operation, which was satisfactorily accomplished There was the disadvantage, however, as Mr. Fergusson remarked, of enlargement of the tonsils, and patients will seldom submit to their removal before the other operation. He thought the cases do not heal so kindly when the tonsils are enlarged. The patient in the present instance was at first refractory; but she calmed down, and the operation was done with facility. It occupied from first to last but twelve minutes—a very short time indeed, Mr. Fergusson observed, particularly since four stitches were introduced.—*Ibid.*

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Curved-horn Toe-nail.—Some months back, Mr. Erichsen removed from a woman, in University College Hospital, the great toe-nail of the right foot, which had been enlarged and growing in a curved horn-shaped manner for the period of twenty years. It was upwards of two inches long. The neighbouring toes were becoming somewhat similarly affected.—*Ibid.*

Cancer of the Lip in a man aged eighty.—The patient was in the Middlesex Hospital upwards of a year ago, with cancer of the lower lip of about three months' duration; the submaxillary glands were enlarged. The disease was a regular oval, smooth, and shallow sore, almost a model of a Hunterian chancre at first; it then gradually became irregular, and the epithelial form of cancer developed itself. The patient, eighty years of age, was a great smoker, and found the sore no inconvenience. It was removed by a V incision by Mr. Mitchell Henry, and the wound healed up by adhesion.—*Ibid.*

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Nævus at the end of the Nose.—A few months ago an infant was brought to University College Hospital with a nævus situated at the end of the nose, a little to the left side. There was a question as to its treatment; but as the nævus was irregular, Mr. Henry Thompson preferred ligaturing it, although it would leave a little cicatrix, and this was accordingly put into practice. He remarked, that even with the application of a nitric acid, or of perchloride of iron, there was the certainty of a cicatrix in the event of the occurrence of sloughing. We subsequently learnt that the ligature was successful; and as the child was so young, no mark of any importance would be ultimately observed.—*Ibid.*

MEDICAL NEWS.

DOMESTIC INTELLIGENCE.

Military Medical Museum.—[The Surgeon-General U. S. Army has recently issued the following circular, to which we take great pleasure in asking attention. Dr. John H. Brinton has been directed to collect the pathological preparations from the military hospitals scattered through the country, and the task of arranging and turning to a useful account these preparations could not have been confided to an abler hand.]

[CIRCULAR No. 2.]

SURGEON GENERAL'S OFFICE,
Washington City, May 21, 1862.

In the monthly reports of sick and wounded, the following details will be briefly mentioned in accompanying remarks:—

SURGERY.

Fractures.—The date of reception, the situation, character, direction, treatment, and result, in all cases.

Gunshot Wounds.—The date of reception, the situation, direction, and character; the foreign matters extracted (if any); and the result in all cases.

Amputations.—The period and nature of the injury; the character of the operation; the time, place, and result.

Exsections.—All operations for, with a statement of the injury demanding them; the date of injury, the date of operation; the joint or bone operated upon, and the result.

MEDICINE.

Fevers.—Their character and symptoms; an outline of the plans of treatment found most efficient, with remarks on the location and sanitary condition of camps, or quarters, during the prevalence of these disorders.

Diarrhœa and Dysentery.—Grade, and treatment, with remarks on the character of the ration, and the modes of cooking.

Scorbutic Diseases.—Character and symptoms, with observations on causation, and a statement of the means employed to procure exemption.

Respiratory Diseases.—Symptoms, severity, and treatment, with remarks on the sheltering of the troops, and the atmospheric conditions.

Similar remarks on other preventible diseases.

Important cases of every kind should be reported in full. Where post-mortem examinations have been made, accounts of the pathological results should be carefully prepared.

As it is proposed to establish in Washington an *Army Medical Museum*, medical officers are directed diligently to collect, and to forward to the office of the Surgeon General, all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable; together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine and surgery.

These objects should be accompanied by short explanatory notes.

Each specimen in the collection will have appended the name of the medical officer by whom it was prepared.

WILLIAM A. HAMMOND,
Surgeon General.

NOTE.—Medical directors will furnish one copy of this circular to every medical officer in the department in which they are serving; and they will hereafter forward to this office with their consolidated monthly reports, all the monthly reports of the medical officers under their supervision. They will also immediately transmit all back monthly reports, and papers of every kind, relating to the above subjects of medicine and surgery, which may have accumulated in their respective offices since the commencement of the rebellion.

Complimentary Testimonial to Dr. John M. Cuyler, U.S.A., late Medical Director at Fortress Monroe.—[We take pleasure in publishing the following correspondence, which does no more than simple justice to a highly meritorious medical officer.]

STATE OF NEW YORK,
SURGEON-GENERAL'S OFFICE,
ALBANY, July 21, 1862.

SIR: In transmitting through you to the honorable Secretary of War the inclosed communication, I perform the most agreeable duty which has thus far devolved upon me. You who are so thoroughly conversant with the qualities of mind and heart which characterize Dr. Cuyler, will see in this but a merited compliment to a true and noble man. You will find among the signatures the best names of New York, and it would be difficult to find on this side of the Atlantic, or on the other either, a jury of medical men whose verdict is entitled to more weight. To the above expression I beg to add, from personal observation, my cordial affirmation. I have the honor to remain

Your obt. servt.,
S. OAKLEY VANDERPOEL,
Surgeon-General N. Y.

Brig.-General WILLIAM A. HAMMOND,
Surgeon-General U. S. Army.

NEW YORK, July 15, 1862.

Hon. E. M. Stanton, Secretary of War:

The undersigned corps of Volunteer Surgeons of the State of New York trust that their addressing you may not be considered an act of supererogation; for, although fully aware that it is not distinctly within the limits of their prescribed duties, they feel that they are discharging a moral obligation in putting on record in the department their high appreciation of the distinguished services which Dr. Cuyler, the

Medical Director of Fort Monroe, rendered daily and hourly, with untiring energy, to the multitude of sick and wounded in the department.

From our personal observation we feel pleasure in saying that we have rarely met with so happy a combination of thorough administrative talent with the highest order of personal skill and experience, and that genuine and true gentleness of heart—by the one benefiting those under his care to the full limit of professional skill, and by the latter shedding comfort and gladness, even where the sufferer is beyond reach of the first.

In thus briefly stating the result of our personal observation, we beg to say that we are not prompted to do so by the contemplated change in the Medical Staff of the army; for while, on the one hand, we do not intend to intrude, we feel, on the other hand, confident that government would not overlook the valuable services of so faithful a servant. We beg simply to be permitted, as we said before, to put on record our appreciation of so high an order of merit, and in doing so we trust it is unnecessary to state that our thus addressing you, sir, is not only unsolicited by but entirely unknown to Dr. Cuyler.

Alfred C. Post, M.D., Stephen Smith, M. D., Ernest Krackowizer, M. D., George Cochrane, M.D., Daniel Ayres, M. D., Daniel E. Kissam, M. D., C. Olcott, M. D., James R. Wood, M. D., William Detmold, M. D., Gurdon Buck, M. D., Willard Parker, M. D., T. M. Markoe, M.D., Charles D. Smith, M.D., J. J. Crane, M.D., John O. Stone, M.D., George A. Peters, M.D.—*American Med. Times*, Aug. 16, 1862.

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Association of Medical Superintendents of American Institutions for the Insane.—The sixteenth annual meeting of this association was held in Providence, R. I., on the 10th, 11th, 12th, and 13th of June last.

The following officers for the year:—

President—Dr. Thos. S. Kirkbride, of Philadelphia.

Vice President—Dr. John S. Butler, of Hartford, Conn.

Treasurer—Dr. O. M. Langdon, of Cincinnati, Ohio.

Secretary—Dr. John Curwen, of Pennsylvania.

A memoir of the late Dr. Bell was read by Dr. Ray.

Several valuable papers were read and discussed; and the members seem to have spent their time usefully and pleasantly. On Tuesday evening the association were entertained by our genial, hospitable, and estimable friend, Dr. Mauran, and on Wednesday afternoon they made a pleasant excursion to Newport, visiting the objects of interest in that attractive place.

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Rush Medical College.—The number of students attending the course of 1860-62 was 134, of whom 35 received at its termination the degree of M. D.

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Medical Inspection of Recruits for the Army.—[The following statement from our New York cotemporary (*American Medical Times*, Aug. 23d, 1862) reveals a neglect of duty in examining medical officers which loudly calls for immediate reform. The mustering into service of men incapacitated for military duty, subjects the country to an enormous expense, seriously weakens the ranks of the army, and fills our hospitals with useless invalids. It is the rule, we believe, in most countries, to charge the medical officers who muster in disqualified persons, with the bounty paid to such recruits, and the expense of their support, etc., up to the time of their discharge; and if such a rule were strictly observed here, an end would soon be put to such mal-practice.]

"The medical inspection of enlisted men is, as far as we can learn, a most shallow farce. Under the pressure of a per caput fee, the inspecting officer aims to increase the numbers which he daily passes to the largest possible extent. A single inspector has been known to examine 250 persons in eight hours; thus giving less than two minutes to each. It is notorious that the troops from the State of New York, of the regiments sent out last year, had every manner of disability. Even cases with double hernia of large size, were indorsed by the inspecting officer."

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The Physician's Visiting List, Diary, and Book of Engagements for 1863.—This useful little publication of Messrs. Lindsay & Blakiston has just appeared. It contains an almanac, a list of poisons and their antidotes, a visiting list for 25 patients per week, and pages for memoranda of various kinds.

FOREIGN INTELLIGENCE.

Wild Thyme in Whooping-cough.—M. JOSET says that an infusion of wild thyme will, in many cases of whooping-cough and affections of the air passages, remove the complaint when all other remedies fail.

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Cinchona in Trinidad.—A renewed attempt is being made to plant the cinchona in Trinidad. It has been planted at a height above the sea of 2800 feet, and in soil of the richest kind.

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Influence of Ozone.—Dr. Ireland remarks, on the influence of ozone on the health of patients in the hospital of Umballa, Bengal, that on one occasion, when the quantity of ozone showed a marked increase, all the patients recovered; on the contrary, a sudden decrease of ozone was followed by a threefold increase in the number of patients, and the prevalence of rheumatism and influenza.—*Lancet*, July 12, 1862.

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Health of the British Troops sent to Canada.—[It will be remembered that during the excitement in England last winter in regard to the Trent affair, a large number of troops were sent to Canada. Extraordinary precautions were taken by the Army Medical Department to protect them from the effects of exposure to the inclement weather of that season of the year; and these measures, it will be seen from the following extract from the *Lancet*, were entirely successful. We allude to them in order to show how much may be effected by proper sanitary measures in securing the health of soldiers.]

"The reports which reach us of the careful medical supervision of the troops for Canada, and the consequent good health of the men despatched thither, are of a kind which must be in the highest degree satisfactory to the nation, and honourable to the Army Medical Department and the medical officers of the Canadian Depôt, who have acted under his orders. The precautions taken were indeed extraordinary. Each man had served out to him the following amount of extra clothing: Two pairs of woollen drawers, two pairs of worsted stockings, two merino under-vests, one chamois-leather waistcoat, one Jersey, one pair of sealskin mitts, one sealskin cap with ear muffler, one sheepskin overcoat, and one pair of Canadian boots; also for the sleigh, in addition, one pair of fur and buffalo robes. The transit in ships was arranged with perfection, and when the men arrived they found the most elaborate and thoughtful provision for their comfort and protection from the cold. Dr. McIlree, the Deputy-Inspector-General of Hospitals in Canada, with the assistance of Surgeon-Major Wood, appears to have carried out the instructions received from Dr. Gibson, the Director-General of the Army Medical Department, with zeal and intelligence. Stations were provided every thirty miles along the route, and small hospitals for the sick were fitted up. Further arrangements were made, where advisable, at farmhouses on the road for the reception of stragglers, and small depôts for medicines and medical comforts. Huts were erected for sleeping, properly warmed, ventilated, and planked; and thus the men were well lodged, and preserved from the demoralization consequent upon being mixed up with the civil population. Dr. Muir, with Dr. Rutherford (the sanitary officer), went over the route before the troops, and put the finishing touch to the arrangements. The men had warm coffee and a meat breakfast, hot rum and water with their lunch, and hot coffee with their supper. Their rations were increased to the degree which the greater demands of cold required. Thus it was ordered by the home authorities that the daily ration of fresh meat should be increased up to a pound and a quarter, or, if necessary, a pound and a half. Valuable general sanitary directions were circulated, and the medical officers were warned to be on their guard against pneumonia. The general results as to health have been, up to the present time, excellent. We believe that the ratio of sickness to health has scarcely amounted to two per cent. This is a result which shows that the Medical Department has merited well of the country, and has performed a difficult duty with entire success."

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Ventilation and Sanitary Condition of Armour-clad Ships.—[The following observations from a late No. (July, 1862) of the *Medical Critic and Psychological Journal* are well worthy of attention in this country by those engaged in the construction of iron-clad ships and by the navy department.]

"It is not a little curious that notwithstanding the many discussions in parliament,

and, it may be added, notwithstanding all that has been said or written in the public press, of the capabilities of armour-clad ships as war vessels, their character as dwellings, and probable influence upon the health of their crews, does not appear to have ever been systematically discussed. Now, the defective sanitary condition of our wooden ships of war, more particularly as to the ventilation of the lower decks, would, it might be conceived, have suggested the propriety, nay, the necessity, at the very outset of so great a modification in the navy as the construction of armour-clad vessels, of considering their health as well as their fighting qualifications. But when it is considered that hitherto armour-clad ships have been so built that their walls will, it may reasonably be inferred, rapidly accumulate and store up heat; and that the circulation of air in the between-decks, unless artificially provided for, will be diminished to the least amount, in consequence of the smaller number and less size of the port-holes, and the rigid exclusion, for the sake of strengthening the walls, of all apertures not absolutely required between the exterior and interior of the vessels, it is manifest that, unless the evils likely to arise from these sources are specially provided against, these ships may in the end become veritable pest-houses. That this foreboding is no mere sanitarian exaggeration, and that we are justified in fearing, there being no evidence to the contrary, that the health condition of armour-clad ships has not received that attention which the importance of the subject demanded and still demands, may be gathered from the results of the trial trips of the vessels of this class already built. They have proved to be very uneasy in a sea-way, and as a consequence it may be surmised that it has been necessary to keep the ports closed to a greater extent than in wooden ships of war—and closure of the ports, it is not to be forgotten, cuts off almost the entire ventilation of the between-decks. The heat of the between-decks, so far as may be judged from the experiments recorded in the naval news of the day, would seem to range higher than in wooden steam-vessels of war—the sickliest ships in the service, in consequence of their heightened temperature. The sailors complain of the extreme 'wetness' of the armour-clad ships; and it is highly significant as to the state of the between-decks, that a little while ago a report was current in naval circles that deck houses would probably be needed for the crews. Finally, experience has taught that the bilges of these ships require to be dealt with after a new fashion. We learn from the *Times* of the 10th ultimo, that some seventy tons of bricks and mortar have been built into the bottom of the Warrior to prevent the lodgment and consequent stagnation of the bilge-water. The numerous valves which are inserted in the lower portions of the various sections of the Warrior are, it would appear, necessarily shorter downward than the divisions; or, in other words, the valves cannot conveniently be made to descend to the angles in the bottom of the ship. Now, the bilge and waste water which becomes stagnant is that which lodges in the bottom between the sections, where it remains undisturbed, and soon becomes putrid. Here it is that the masonry has been applied. All the leakage and waste water will by this alteration be brought to one common level, and also to one common suction. Additional pumps and valves have also been added; and by these arrangements it is expected that scarcely a gallon of water can hereafter accumulate in any part of the vessel. It is to be hoped that the absorbing power of brick and mortar has not been overlooked and provided against.

"But armour-clad ships are one-decked vessels; hence the problem of their ventilation and sanitary condition is doubtless simpler and ought to be more readily met than that of several-decked ships. The fighting and sailing qualities of ships of war must of necessity be always primary considerations with naval architects, but this does not in any degree imply the need of a neglect of the sanitary condition. As with house-architects the health as well as the living condition of a house ought to be an imperative consideration, so with naval architects, the health condition as well as the fighting and sailing qualities of ships should be also imperative. The former condition is just as sound a matter for scientific discussion and argument, and as important ultimately to the public and the service, as the latter conditions. The absence of any indications of the question being dealt with systematically and scientifically during the discussions and preli-

minary steps pending the present reconstruction of the navy, and the facts mentioned, have naturally given rise to the doubts we have expressed. In the construction of a ship of war it cannot be questioned that its health condition ought to enter as largely into the scientific consideration of naval architects as its fighting and sailing qualities. These latter conditions are of primary importance only in so far as they are the original objects of and must determine the form of the vessel, and modify (not set aside) the circumstances for the solution of the health problem. House architects know that it is easier to build a new house with due regard to its sanitary condition than it is to remedy sanitary defects in an old one. This rule we fancy ought to hold good with ships. The admiralty is entirely responsible to the public in this matter. It lacks nothing, either in men or means, for dealing with the health condition as well as the fighting and sailing qualities of ships in the most effective manner. We hail with pleasure the signs of interest it has already manifested in the subject, as evinced by their spokesman Lord C. Paget, but that interest is wanting in thoroughness. It has not shown itself a moment too early, but rather too late. Letting bygones, however, be bygones (to use the time-honoured phrase), we look to the future. The Horse-Guards was taught its lesson of thorough sanitary reform by the horrible disasters in the Crimea in the winter of 1854-55. It will be well for the admiralty to have a care lest it be taught its lesson of thoroughness by some equally horrible catastrophe. What would be the lot of the crews of a fleet of our ironsides in the yellow fever zone (no unlikely destination with the present aspect of affairs in the West), if that dreaded plague got among them, and the health-condition of the ships was such as we have reason to surmise it may be? The probable results are dreadful to contemplate. Here is a gauge from the preface to the Reports of the Health of the Navy in 1858 (published October, 1861). Yellow fever was introduced (according to Dr. Bryson) into the Icarus, one of the West India squadron, in September, 1861. She subsequently infected the Imaum, the Hydra, and the Barracouta. The crews of these ships numbered about 640 men. Of these, in the course of six weeks, no less than 160 were seized with yellow fever, and *seventy* died. It may be noted also that fully one-half of all the deaths from fever throughout the service in the three years 1856-58 arose from yellow fever."

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Dangerous Fashionable Folly—Green Artificial Flowers.—An analysis of green artificial flowers has been made by Professor Hoffmann for the Ladies' Sanitary Association; he says:—

"In a dozen of the leaves sent me analysis has pointed out on an average the presence of ten grains of white arsenic. I learn from some lady friends that a ball-wreath usually contains about fifty of these leaves. Thus a lady wears in her hair more than forty grains of white arsenic, a quantity which, if taken in appropriate doses, would be sufficient to poison twenty persons. This is no exaggeration, for the leaves sent to me were—some of them at least—only partly coloured, others only variegated. In consequence of some inquiries, I have been led lately to pay more than usual attention to the head-dresses of ladies, and I observe that the green leaves are often much larger and more deeply coloured than those which I have received.

"Ladies cannot, I think, have the remotest idea of the presence of arsenic in their ornaments. If aware of their true nature, they would be satisfied with less brilliant colours, and reject, I have no doubt, these showy green articles, which have not even the merit of being, as far as colouring is concerned, a truthful imitation of nature."

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Dialysis.[1]—Human ingenuity is advancing the art of chemical analysis with rapid strides. It is becoming no easy matter to keep oneself at all *au niveau* with the discoveries in this department of science. While yet fascinated with the beauties and subtleties of Spectral Analysis, our attention is claimed for another analytical discovery, less beautiful it is true and less subtile, but susceptible of much wider application, yielding results of greater practical value, and therefore possessing more immediate interest to us as medical men.

[1] "Graham on Liquid Diffusion applied to Analysis," *Royal Society's Transactions* for 1861, Part I. "Redwood on Dialysis," *Pharmaceutical Journal* for April, 1862. "Daubeny's Lectures on Agricultural Chemistry," *Gardner's Chronicle* for December 7 and 14, 1861.

We allude to the discovery of dialysis, which we owe to Mr. Graham, the present Master of the Mint. It may fairly be described as a kind of royal road or short cut, enabling us to arrive at analytical results previously unattainable, or attainable only by processes far more complicated, far more open to fallacy. Except in rare instances it employs no chemical reagents; it achieves its end merely by availing itself of certain physical properties inherent in the substances to be analyzed. Our readers may possibly welcome some account of the principle of this new analytical process, the mode of its practical application, and the peculiar, valuable results it enables us to attain.

Dialysis may be defined as analysis effected by liquid diffusion—in other words, the separating of liquid substances from each other by taking advantage of their different rates of diffusibility under particular circumstances. Our knowledge of the laws of liquid diffusion was exceedingly imperfect up to the summer of last year, when Mr. Graham published the results of his elaborate researches on the subject. So much of these results as is necessary in order to understand the principle of Dialysis, we will endeavour very briefly to explain.

Firstly. There is a great difference in the diffusibility of different substances in the liquid state, just as there is in the gaseous state. If by means of a pipette we convey a solution of any substance (a salt for instance) to the bottom of a jar of distilled water so as to form a distinct stratum, and then leave the jar undisturbed in a uniform temperature, the dissolved salt will always diffuse into the superincumbent water at a certain rate within a certain time. This rate will vary with the nature of the medium into which diffusion takes place; if, for instance, some other fluid be used instead of water. Briefly expressed, the fact amounts to this—that "different substances in solutions of equal strength diffuse unequally in equal times." (Redwood.) For instance, common salt diffuses into water twice as fast as Epsom salt, and this latter twice as fast as gum Arabic. Again, if instead of a single substance we convey a mixed solution of two or three substances to the bottom of the said jar, these substances, notwithstanding their mixture, will still maintain their respective rates of diffusion, the more diffusive body travelling most rapidly and showing itself first and most largely in the upper strata of superincumbent liquid. Hence, what in the case of a single body is mere diffusion, in the case of two or more bodies mixed together is a diffusive separation of them from each other. Such separation will be more or less complete in proportion to the difference between their respective diffusibilities.

Secondly. Between highly diffusive substances on the one hand, and feebly diffusive substances on the other, Mr. Graham has established some important grounds of distinction. The only one, however, which concerns us at present is this viz., that the former affect the crystalline condition, while the latter are not crystallizable, and have, further, the peculiarity of becoming gelatinous when combined with water. Hence, highly diffusible substances he classes together as "crystalloids," and feebly diffusible ones as "colloids" (from *collin* or gelatine, the type of the class). Among the colloids are hydrated silicic acid, hydrated alumina, and other soluble metallic peroxides isomorphous with the latter body, together with gelatine, albumen, starch, dextrin and the gums, caramel, vegetable and animal extractive matters.

Now, it is characteristic of the bodies just mentioned that, while they are more or less permeable to crystalloids, they are wholly impermeable to other colloids like themselves which may be in solution. For instance, suppose a layer of firm jelly, or some other colloid of a more convenient nature (such as an animal membrane) to be interposed between water on the one side, and a mixed solution of common salt and albumen on the other, it will wholly intercept the albumen, but will allow the salt freely to diffuse through its substance into the water on the opposite side.

It is plain, therefore, that although, as was above shown, simple diffusion into water will partially separate mixed bodies from each other, a far more complete separation will be attained by causing the diffusion to take place into water, not directly, but through an intervening membrane, such as a bladder or sheet of parchment. And this is just what is done in dialysis, which is nothing more than the diffusive separation of crystalloid from colloid bodies through a septum of gelatinous matter, the septum allowing the passage of the one, not of the

other. The apparatus needed to conduct this process is the simplest possible. It consists of (1) a basin or deep dish containing three or four inches of pure water; (2) a "dialyzer," which is merely some kind of membranous septum secured by a bit of string around a light hoop of sheet gutta-percha, so as to form a vessel like a tambourine. Of all the substances yet used for dialytic septa, the most convenient has been found to be the "parchment-paper" made and sold by Messrs. De la Rue & Co. Care must be taken that it is not porous. The mixed fluid to be dialyzed is first poured into the hoop upon the surface of the parchment-paper to the depth of half an inch or so. The dialyzer is then floated on the basin or dish of water, into which the crystalloid constituents of the mixture gradually diffuse, the colloid constituents remaining behind. Mr. Graham found that half a litre of urine, dialyzed for twenty-four hours, gave its crystalloidal constituents to the external water. The latter on evaporation yielded a white saline mass, from which urea was extracted by alcohol in so pure a condition as to appear in crystalline tufts upon the evaporation of the alcohol. Professor Redwood observes that ordinary septa can only be used in dialyzing aqueous solutions; a septum suitable for dialyzing alcoholic or ethereal solutions not having yet been discovered. Some form of collodion, he suggests, may possibly answer the purpose.

The process of dialysis admits of some very important practical applications, to which we will briefly allude. (1.) It permits of the isolation of various chemical substances in a state of purity in which we were not previously aware of their being able to exist. For instance, chemists had hitherto never succeeded in obtaining a perfectly pure solution of silica. The solution of it, obtained by treating silicate of soda with hydrochloric acid, was not pure; it always contained a certain quantity of hydrochloric acid and chloride of sodium which resisted all further attempts at separation. But by subjecting the said silica solution to the process of dialysis, the acid and salt being crystalloids diffuse out, while the silica being a colloid remains behind dissolved in water and perfectly pure. In like manner, dialysis enables us to obtain solutions of peroxide of iron, alumina, and several other bodies, perfectly free from the salts or other chemical agents hitherto indispensable to their solution. (2.) In medico-legal inquiries, it affords a most valuable means of separating arsenious acid and the various poisonous metallic salts from their organic solutions. For instance, let a portion of tissue suspected to contain arsenic be chopped into small pieces, soaked in pure water, and then thrown on the dialyzer. At the end of twenty-four hours the arsenic, even if its quantity be infinitesimally small, will have diffused into the external water in a state fit for the immediate application of chemical tests. The poison is thus eliminated free from all organic impurity, and without employing any other agent than distilled water—advantages which any one conversant with the usual processes for separating minute quantities of arsenic will not fail to appreciate. Vegetable poisons, such as strychnine, morphine, and the other poisonous alkaloids, may be separated from their organic solutions precisely in the same manner. (3.) Professor Redwood suggests its applicability to another purpose, viz., "the separation of the more active crystallizable constituents of vegetable substances from inert colloidal matter, and the production in this way of a new class of medicines, containing the more active principles of plants, partially purified, and in the state of combination in which they exist in nature." Such preparations would occupy an intermediate place between tinctures, decoctions, and extracts, on the one hand, and the pure active principles which they often contain (such as alkaloids), on the other. The advantages of vegetable remedies in this form would be greater uniformity of strength, certainty of action, and convenience of administration. They would also keep better, and being void of all inert matter they would be *purely* medicinal, which in their present crude state they are not. The difficulties in the way of their preparation would be great, but probably not insurmountable. (4.) It affords a partial explanation of certain points in the physiology of animals and plants hitherto involved in much obscurity. (We say "partial" explanation, because, in all the processes about to be mentioned, a *vital* as well as a *physical* force is at work. At any rate, their full phenomena take place only where life is present; they cannot be imitated outside living organisms.) Professor Red-

wood instances the processes of absorption and secretion accompanying the act of digestion. The mucous membrane of the stomach and intestines may be compared to a dialytic septum between the blood on the one side, and the blood-making constituents of food on the other. Dilute liquids taken into the stomach diffuse through, or (as we generally say) are absorbed by, its mucous membrane. The plastic constituents of food, on the other hand, being colloids, "are retained in the stomach, while the act of digestion proceeds under the influence of crystalloids that are dialyzed into that organ, and then pass on to undergo new changes connected with absorption, assimilation, and excretion." He further observes that "the action of medicines must be considerably influenced by the state in which they exist as crystalloids or colloids. Thus, iron in the state of chloride, sulphate, or other crystalloidal salt, would be diffused through the walls of the stomach; but not so if in the state of a colloid, such as basic chloride or basic nitrate, in which state it would pass into the intestines, exerting its action probably through the entire length of the alimentary canal." When we know more of the comparative diffusive power of different medicinal preparations than we do at present, we shall probably prescribe them with greater success.

Lastly. Professor Daubeny, of Oxford, has shown, very clearly and fully, how and to what extent the principle of dialysis explains certain phenomena of vegetation—such as the transmission of sap through a plant, the separation of its various secretions from each other, and their maintenance in a state of isolation in appropriate receptacles. (1.) The sap is propelled upwards through the plant partly by capillarity, partly by atmospheric pressure, owing to the evaporation from the leaves and the partial vacuum thereby occasioned. But it makes its way *into* the plant, in the first instance, by endosmosis through the spongioles of the roots. (2.) The particular compounds secreted from the sap in different parts of the plant are maintained in their state of isolation and purity by the same principle of dialysis. The peculiar juices of plants (starch, gum, oils, etc.) are generally colloids, and therefore have no tendency to pass through the walls of the cells in which they have been elaborated. The different acid and alkaline products, on the other hand, being crystalloids, permeate membrane freely, "but are only temporary constituents or steps in the series of changes which are intended to convert carbonic acid into sugar and starch, and they are consequently got rid of either by exosmosis or else by some chemical process by which they are converted into glucose or fruit sugar." The principle of dialysis has likewise important bearings on the nature of the ultimate molecules of matter, and on certain geological phenomena. These, however, possess more interest to the geologist and physicist than the physician.—*Med. Times and Gaz.*, Aug. 2, 1862.

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Thalium, the Last New Element.—The last new element, which has recently been discovered, in extremely minute quantity, in some ores of sulphur, by the aid of the spectroscope and process of spectrum analysis, is shown at the International Exhibition by its discoverer, Mr. Crookes. Several of its compounds are also exhibited. Thalium gives a single, bright-green line in the prismatic spectrum; hence its name, from *thallus*, a green branch.—*Ibid.*

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Rubidium.—The rare alkaline metal discovered by M. Bunsen in certain mineral waters by the spectrum analysis, has been recently found by Grandeau in the ashes of beet-root, tobacco, coffee, tea, and grapes. The spectrum of tobacco gave bands characteristic of lime, lithium, potassium, and rubidium. These facts show that rubidium is one of the most widely diffused bodies in nature, since vegetables of the most diverse kinds are found to take it up from the soil. This opens a field of research in vegetable chemistry into which M Grandeau proposes to enter.—*Ibid.*

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Yellow Fever amongst the French Troops in Mexico.—It seems by intelligence received by the *Tasmanian* from St. Thomas, that this disease is committing the most horrible ravages in the French camp; that out of a regiment of one thousand strong, no less than 475 men, exclusive of thirteen officers, have fallen victims to this disease; that many others of the men are in a most pitiable condition; that every medical officer attached to the regiment has perished; and that General Zaragosa has been obliged to seek assistance from the medical staff of the navy. In this deplorable condition the

sickly remnant of the Emperor's troops were surrounded on a recent occasion, but with the undaunted courage which characterizes them, they succeeded in completely routing 5000 Mexicans, visiting them with dreadful slaughter. General Zaragosa is now enabled to keep open his communications with the sea, but no onward movement will be attempted until the arrival of reinforcements in the month of September next.—*Lancet*, Aug. 2, 1862.

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Woman's Mission.—[We extract the following sensible remarks on female physicians from our esteemed cotemporary, the *Dublin Medical Press*, July 9, 1862.]

The long-debated question of woman's mission and the oft-repeated call for her so-called "rights" has at length attracted the anxious attention of thinking men. Our readers are aware that the consideration of the subject has been forced upon us by an application from a lady to the Edinburgh College of Physicians, to be permitted to enter for medical and surgical instruction with a view to qualify herself for practice, and by the refusal of her demand by the Council of the College by the narrow majority of two among thirty-four members. Were it not for the smallness of this majority by which the decision was affirmed, and the number of advocates which the fair candidates for medical honours have found, we should have passed over their claims in silence as utterly unworthy of consideration, but as we find their demands advocated by many anonymous letter writers and seriously concurred in by a large number of those who ought to be capable of giving judgment, we can no longer refuse a passing notice. We take it for granted that even the blue-stocking sisterhood will not deny that the great moral requisites for a surgeon are—Firstly, quickness of perception and observation to enable him to diagnose. Secondly, logical ability to point out the treatment and prognosis. Thirdly, strength of mind to undertake the necessary responsibility and caution in carrying out the treatment; and Fourthly, unflinching nerve and coolness to enable him to operate, and to render him equal to any emergency which may arise. All but the last of these qualifications are requisite also for the physician, and we maintain that in most of them the female sex are radically deficient and morally incapable. We are far from wishing to deny the fair sex the honours of their undeniable discrimination and tact, or to lessen the importance of their gentle and unwearied care, and of that quiet efficiency and absence of fussiness which has received its full recognition in their universal selection as nursetenders in the hour of sickness; but we maintain that if there were no other objection, the deficiency of argumentative power and wayward persistence in their own opinion, which are as much characteristics of the female mind as those we have mentioned, entirely unfit them for the weighty responsibilities of life and death. But although these facts will not be questioned by unprejudiced readers, we are prepared for a direct issue as to their truth on the part of our fair friends who will, no doubt, asseverate that their sex excels ours in all these points, and that the current opinion to the contrary is nothing but the result of man's stupid prejudice. They will not, however, venture to deny the existence of physical disqualifications, which may well be considered insuperable. Even if the promptings of modesty should be entirely eradicated from the mind of the female doctor, and that she could approach a case of primary syphilis or fistula in ano without the repugnance natural to a modest woman, it is difficult to imagine how a successful practice could be conducted by any person subject to periodical indisposition, and to a total disqualification from all business for three months out of the twelve. Will the medical sisterhood banish from their hearts all hope of ever enjoying the hopes and affections of maternity? or will they devote themselves to a cheerless celibacy for life? Such a consummation would be impossible, as it is undesirable, and the chimerical scheme would, if carried out, be productive we are convinced of many and great evils. We have chosen to deal thus largely with the general controversy, because these objections apply as fully to the practice of midwifery as of surgery and medicine. Even if the female sex were endowed with all the talents, powers, and qualifications necessary for the practice of our profession, they still have duties and privileges confided to their keeping, the cultivation of which is entirely incompatible with public life or active labour. With three or four solitary exceptions the career of woman-doctors, even in the obstetrical line, has shown their incapacity for the work. Out of the multitude of midwives and "*sages femmes*,"

not more than half a dozen have ever attained to celebrity, and in no one case have their efforts in any other line attained anything but an unenviable notoriety. The following passage describes the fate of one of the most successful female practitioners in the New World, and aptly illustrates our remarks:—

"The fate which has befallen one well-known and highly esteemed American female physician is significant. 'She was found,' writes our authority, 'unable to meet the exigencies of the every-day duties of her profession, as every one practically familiar with the exacting nature of those duties would have foreseen. The storm, the cold, the night, the distance, were barriers which she could not overcome without assuming the habits, dress, and manners of the opposite sex. And often the disease which she encountered was of such a nature as to compel her either to unsex herself in regard to her instinctive habit of reticence and modesty, or preserve her feminine sensibilities by neglecting her professional duties. Subsequently she became the medical head of a private charity for the treatment of sick women, in which capacity her medical education is admirably adapted to develop and give efficiency to her natural tastes and her instincts, and thus render her life one of eminent usefulness.'"

We have dwelt on this subject, as we have said, longer than we would have wished, because we perceive that woman's offers of her assistance have been seriously entertained by authorities in our profession and by the public—*i. e.*, the female portion of it. We notice the subject at all with regret; firstly, because we regard these advances on the part of the female sex as an evidence of a depreciation in the esteem for that modesty which formerly was an ornament and a distinctive quality of the sex, and as an ebullition of that sentiment which daily intrudes itself on our notice by the less harmful means of pork-pie hats, vast crinolines, knickerbocker gaiters, and other developments of woman's dress. We are glad to believe that these presumptuous and unfeminine demands to be permitted to outstep their proper sphere are not indorsed by any considerable section of the fair sex, and we think that all modest women should protest strongly against being thus saddled with the extraordinary demands of a few strong-minded would be (if we may coin a word) philogynists. But we are pained also to find that sixteen members of the Council of the Edinburgh College of Physicians were prepared to admit the claimant to the privileges of their College. We cannot believe that these gentlemen, having the strong arguments against the hackneyed demands of these "ladies" before them, could seriously record their votes in their favour, having honestly at heart the good of the community and the advancement of their profession. We can only assume that they derived some assistance in arriving at a verdict from the consideration of the advantages of the patronage, moral and monetary, of the female aspirants who would no doubt crowd the only gate open to them for entrance to the profession. We feel confident that we express the single feeling of our brethren in Ireland when we say that if such a step were attempted by any of our licensing bodies, such a division list would secure at the next election a more discriminative representative Council.

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Medical Council of Great Britain.—The doings of this council from which so much was expected seems not to have been satisfactory. Its attempts to regulate and improve medical education, and to purge the profession from unworthy members have been failures; and its new pharmacopœia, which has cost heavily in time and money, is now under protest in consequence of the council committing the blunder of introducing new weights and measures, which it is contended would create great confusion.

It is probable that the body will have to be entirely reconstructed by a new act of Parliament.

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The Astley Cooper Prize.—This prize, of 1500 dollars, has been awarded to Dr. Edward Crisp, by the physicians and surgeons of Guy's Hospital, for his essay on the Anatomy, Physiology, and Pathology of the Human Pancreas.

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British Medical Association.—The thirteenth annual meeting of this association was held in London on the 5th, 6th, 7th, and 8th of August. We see by our late Journals that the meeting was largely attended and was a highly interesting one, and that Prof. Wood, of Philadelphia, and Dr. Ephraim Cutter, of Woburn, Mass., were present.